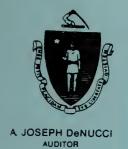
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The Commonwealth of Massachusetts DEPUT

AUDITOR OF THE COMMONWEALTH

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NO. 87-213-2

STATE AUDITOR'S REPORT ON THE ACTIVITIES OF THE UNIVERSITY OF MASSACHUSETTS AT AMHERST JULY 1, 1984 TO JUNE 30, 1986

OFFICIAL AUDIT REPORT

OCT 3 0 1987

ISSUED BY THE Department of the State Auditor



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The Commonwealth of Massachusetts

AUDITOR OF THE COMMONWEALTH

STATE HOUSE, BOSTON 02133

A. JOSEPH DENUCCI AUDITOR

AUDITOR'S REPORT

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We have examined the financial statements of the University of Massachusetts at Amherst for the period July 1, 1984 to June 30, 1986, as listed in the Table of Contents. We made our examination in accordance with generally accepted government auditing standards for financial and compliance audits and, accordingly, included such tests of the accounting records and such other auditing procedures, including tests of compliance with applicable laws and regulations, as we considered necessary in the circumstances.

As described in the Notes to Financial Statements, No. 1 and 2 (pages 27 and 28), the state appropriation records of the University of Massachusetts at Amherst are maintained on a basis prescribed by the Commonwealth of Massachusetts. This basis differs in certain respects from generally accepted accounting principles. Accordingly, the accompanying financial statements are not intended to present the school's financial position and the results of its operations in conformity with generally accepted accounting principles.

In our opinion, the accompanying financial statements present fairly the expenditures under appropriations and receipts account of income of the University of Massachusetts at Amherst for the two fiscal years ended June 30, 1986, in conformity with the Commonwealth's accounting system, which has been applied on a consistent basis. The tested items complied with applicable laws

and regulations, and our audit procedures revealed nothing that caused us to believe that the untested items did not comply with applicable laws and regulations.

February 27, 1987

A. JOSEPH DEMUCCI Auditor of the Commonwealth

REPORT ON ADEQUACY OF INTERNAL CONTROL SYSTEM

We have examined the accompanying financial statements of the University of Massachusetts at Amherst for the two fiscal years ended June 30, 1986, and have issued our report thereon dated February 27, 1987. As part of our examination, we made a study and evaluation of the system of internal accounting control of the University of Massachusetts to the extent we considered necessary to evaluate the system as required by generally accepted government auditing standards. For the purpose of this report, we have classified the significant internal accounting controls in the following categories:

- 1. Revenue
- 2. Purchases/disbursements
- 3. Inventory
- 4. Property and equipment
- 5. Payables
- 6. Payroll

Our study and evaluation included all of the control categories listed above. The purpose of our study and evaluation was to determine the nature, timing, and extent of the auditing procedures necessary for expressing an opinion on the accompanying financial statements. Our study and evaluation was more limited than would be necessary to express an opinion on the system of internal accounting control taken as a whole or on any of the categories of controls identified above.

The management of the University of Massachusetts at Amherst is responsible for establishing and maintaining a system of internal accounting control. In fulfilling this responsibility, estimates and judgments by management are required to assess the expected benefits and related costs of control procedures. The objectives of a system are to provide management with reasonable, but not absolute, assurance that (1) assets are safeguarded against loss from unauthorized use or disposition and (2) transactions are executed in accor-

dance with management's authorization and recorded properly to permit the preparation of financial statements in accordance with the Commonwealth's accounting system. Because of inherent limitations in any system of internal accounting control, errors or irregularities may nevertheless occur and not be detected. Also, projection of any evaluation of the system to future periods is subject to the risk that procedures may become inadequate because conditions may change or the degree of compliance with the procedures may deteriorate.

Our study and evaluation, conducted for the limited purpose described in the second paragraph, would not necessarily disclose all material weaknesses in the system. Accordingly, we do not express an opinion on the system of internal accounting control of the University of Massachusetts at Amherst, taken as a whole, or on any of the categories of controls identified in the first paragraph. However, our study and evaluation disclosed conditions that we believe result in more than a relatively low risk that errors or irregularities in amounts that would be material in relation to the financial statements of the University of Massachusetts at Amherst may occur and not be detected within a timely period. (See Audit Results section, pages 5-22.) These conditions were considered in determining the nature, timing, and extent of the audit tests to be applied in our examination of the financial statements for the two fiscal years ended June 30, 1986, and this report does not affect our report on those financial statements dated February 27, 1987.

This report is intended solely for the use of management and the Board of Regents of Higher Education. This restriction is not intended to limit the distribution of this report, which is a matter of public record.

AUDIT RESULTS

1. Improvements Needed in Monitoring Vehicle Use

Our review of motor-vehicle policies and records at the University of Massachusetts at Amherst (UMA) showed that the monitoring of vehicle use needs to be improved.

Because UMA's current policies do not contain written guidelines for standard recordkeeping practices, the records of vehicle use, fuel consumption, and maintenance kept by the individual departments were not uniform or centralized and sometimes lacked sufficient detail. As a result, it is difficult for UMA to accurately determine whether the vehicles under its control are used economically and efficiently. In addition, contrary to UMA's Property and Inventory Control Manual, UMA's Motor Vehicle Review Board did not monitor the utilization and need for all UMA vehicles.

According to the UMA's Property and Inventory Control (PIC) records, 38 departments had a total of 300 registered passenger vehicles, i.e., cars, vans, and trucks. PIC inventory records showed that these vehicles had an original cost of \$2,325,230 and were purchased from the following funding sources:

		Sou	rce of Fundi	ng
	Totals	State	Trust	Other*
Number of Vehicles	300	<u>253</u>	<u>29</u>	18
Original Costs	\$2,325,230	\$1,852,067	\$320,086	\$153,077

*Grants and donations

We reviewed the vehicle-use records maintained by 11 departments, as of December 31, 1986, representing 235 (78 percent) of UMA's passenger vehicles. We found that these records and the information kept in them varied from department to department and ranged from adequate (i.e. sufficient to permit monitor-

ing of economy and efficiency of vehicle use) to none at all. In addition, one department kept more records than needed to monitor vehicle use.

The Station Services Department, for example, summarized all expenses (gas, oil, parts, labor, and tolls) for each of its 54 passenger vehicles onto monthly expense reports for its own files.

On the other extreme, we were informed by a responsible official of the Athletics Department that there were no records kept showing the use of two passenger cars under its control. We were informed that one vehicle was used mainly by football coaches, while the other was used exclusively by the Dean of Physical Education. Furthermore, the recordkeeping within this department was not uniform, since usage sheets for its vans were kept in an office different from the offices having responsibility for the passenger cars.

The other nine departments that we tested had some type of records ranging from adequate to poor, but, again, the records were not uniform from department to department and in some cases lacked essential information such as mileage driven, odometer readings, destination, purpose, or gasoline used. Three departments recorded vehicle use on a desk calendar rather than in a bound logbook. Furthermore, these calendars showed only date and driver. Additionally, the Housing Services Department stated that, even though each of its vehicles has a logbook showing daily vehicle use, it is difficult to get employees to fill out the logbooks, since it is not a written UMA requirement.

Moreover, none of the 11 departments that we tested required an employee to complete a form, signed by an authorized UMA official, stating the reason(s) for taking a vehicle home or using it beyond normal work hours, e.g., overnight. Most departments stated, however, that they would be aware of a vehicle being taken home or used beyond normal work hours. Administrative Bulletin 84-7, issued by the Executive Office for Administration and Finance

on August 18, 1984, outlines specific guidelines, rules, and forms to be used when an employee finds it necessary to use a state vehicle for domicile travel. Although this bulletin pertains to vehicles operated by MVMB, UMA should adopt a similar policy to adequately control domicile use of its vehicles.

We also reviewed the fuel-consumption and maintenance records of these 11 departments as of December 31, 1986. We found that these records were not centralized, i.e., there was no single entity responsible for reviewing and gathering the information and monitoring the costs. Furthermore, there was no uniformity in the type of information maintained by the various entities. Both the Station Services and Physical Plant departments had their own maintenance facilities, performed all repairs to their vehicles, and kept extensive records of repairs and fuel consumption for each vehicle. The other departments tested had fueling and maintenance performed by the Physical Plant Department, did some of their own minor maintenance, and had their vehicles repaired or fueled at service stations located off-campus. Even though the Physical Plant Department kept the same kind of records of repairs that it performed for other departments as it kept for the repairs made on its own vehicles and each department had billing invoices for off-campus repairs, there was no uniformity or centralization of these records to enable determination of total repairs and fuel costs. The Alumni Affairs Department informed us that it had sent its vehicle for repairs to an off-campus service station only to find that the Physical Plant Department had already performed the repairs at an earlier date. Available records showed that, for fiscal years 1985 and 1986, maintenance costs for vehicles serviced by the Physical Plant Department alone totalled approximately \$804,000.

In 1970, UMA established the Motor Vehicle Review Board (MVRB) to monitor

the utilization and need for all vehicles. MVRB's duties are outlined in UMA's Property and Inventory Control (PIC) Manual (revised December 1982), Section IV, which states, in part:

A Motor Vehicle Review Board (MVRB) has been established to review utilization and need for all vehicles and submit recommendations for increased efficiency in vehicle utilization. . . The Board will submit recommendations to the Director of Financial Affairs on a continuing basis. . . . The Motor Vehicle Review Board will periodically review the assignment and utilization of all vehicles, service and non-service. The holding Department, upon request, will provide the Motor Vehicle Review Board with a listing of vehicles, which will include the following: Registration Number, Type, Make, Year, Model, Mileage, Condition, Miles per Month, and Use. This listing will be utilized by the Motor Vehicle Review Board in arriving at Findings and Recommendations which will be submitted to the Director of Financial Affairs for increased/better utilization, including reassignment.

We learned, however, during an interview with a member of the board, that the board has not formally met for a number of years. In addition, there were no minutes kept for any of the meetings that were held, and any discussions by board members were done by telephone. Furthermore, we found nothing to indicate that MVRB had periodically requested departments to submit vehicle data, and, consequently, there was no evidence of the board's making recommendations for better use. The establishment of this board by UMA was a positive step toward monitoring vehicle use. However, because it did not comply with the PIC Manual, MVRB did not monitor the economy and efficiency of vehicle utilization. In addition, it appears that MVRB's inactivity contributed to the lack of uniform and centralized records, which prevents any entity within UMA from accurately monitoring the use, maintenance, and fuel consumption of UMA's vehicles.

UMA's PIC Manual states that all vehicles are to be operated in accordance with state and UMA regulations. These regulations generally state that vehicles shall be used for only official business--i.e., the vehicles shall not be operated outside the necessary working hours, pleasure riding and private use

are absolutely forbidden, and no vehicles shall be used for providing transportation of state employees between their domiciles and places of employment. Without having uniform and complete detailed logbook records of vehicle use and centralized monitoring of vehicle use, UMA cannot ensure that the vehicles are being operated in accordance with these regulations. Furthermore, since UMA has expended a large sum of money to acquire these vehicles (\$2,325,230) and to maintain them (labor and material costs for services performed by the Physical Plant Department alone totalled approximately \$804,000 during the audit period), it is important to have strong controls that will allow for effective monitoring of vehicle use, fuel consumption, and maintenance.

Recommendations: The university should--

- 1. Expand its current PIC manual guidelines on vehicle use to include (a) a requirement that all departments maintain similar logbook records that show, at a minimum, date, driver, destination, purpose, and odometer readings; (b) a requirement for all departments to record and summarize total repairs and fuel consumption in a logbook or some type of permanent record; and (c) a requirement for written authorization to use a vehicle beyond normal work hours and for home use stating the reason(s). (Executive Office for Administration and Finance Bulletin 84-7 and Form MVMB33 should be consulted.)
- 2. UMA should ensure that the Motor Vehicle Review Board reviews vehicle use and need in accordance with its PIC Manual, and consider appointing a central coordinator or coordinators to monitor all vehicle use and fuel and repair costs.

Auditee's Response:

Recommendation: #1

Management will review motor vehicle use recordkeeping requirements with the objective of establishing standard reporting procedures for the Amherst campus. In addition, guidelines requiring all departments to maintain a standard log for vehicle maintenance will be submitted to management for approval.

Management will review Administrative Bulletin 84-7 as it relates to domicile travel and, if appropriate, adopt a similar policy for use of University vehicles.

Recommendation: #2

The Motor Vehicle Review Board (MVRB) will review vehicle use and need in accordance with the PIC manual. In addition, Management will con-

sider appointing a central coordinator to monitor vehicle fuel consumption and repair costs at the Amherst campus.

2. Lack of Effective Work Order Controls

We examined the controls within the university's work order system and conducted audit tests of selected transactions. The work order system is used by the Physical Plant Department to receive, process, and complete requests from the Auxiliary Services Division and the various academic and administrative departments for alterations, repairs, and routine maintenance on campus. We found the following deficiencies in the work order system, which resulted in a system that was inefficient, uneconomical, and ineffective:

- A. A backlog of 1,169 work orders that, as of June 30, 1986, had been pending for over one year;
- B. Inaccurate, obsolete, and duplicate files;
- C. Inadequate work order system;
- D. Lack of manuals detailing procedures to be followed under the work order system;
- E. Cost overruns ranging from \$700 to \$78,000; and
- F. Materials purchased for specific work orders (having a total value of \$17,781) missing from storage and similarly purchased materials (having a total value in excess of \$62,000) subject to loss.
- A. Work Order Backlog: Our review disclosed a backlog in work orders, as of June 30, 1986, that represented proposed work at an estimated cost of approximately \$1,263,000 (as determined by the university) and consisted of the following:

		Age G	reater	than 1 Ye	ar_
Type of Work Order	Number	1-4 yrs	%	5-12 yrs	%
*Project Work Orders (PWO)	252	76	29%	66	25%
**Minor Work Authorities (MWA)	299	112	37%	5	2%
***Routine Maintenance Orders (RMO)	618	118	19%	4	1%
	1,169	306		75	

^{*}Alterations having an estimated value of greater than \$2,000

**Alterations having an estimated value of less than or equal to \$2,000
***Repairs to existing structures having costs that may range from \$50 to several thousand dollars

Responsible Physical Plant Department officials attributed this work order backlog to understaffing in several departments because approximately 200 approved positions are currently unfilled because of a lack of funding. In addition, university officials stated that the Physical Plant Department did not hire outside contractors to perform maintenance repairs to compensate for the understaffing within its shops.

B. <u>Inaccurate</u>, <u>Obsolete</u>, <u>and Duplicate Files</u>: Our review also disclosed that the work order files were in many instances inaccurate, obsolete, and unnecessarily duplicated.

We found that 40 percent of PWOs in the Scheduling Section's files and listed as awaiting scheduling were either complete (21 percent), cancelled (15 percent), or in progress (4 percent) and that 25 percent of MWAs awaiting scheduling were either complete (20 percent) or cancelled (5 percent).

In addition, because Central Stores (the materials and supplies warehouse) is in a different location from the Scheduling Section, Central Stores also maintains a copy of each PWO for which materials were requested. We feel that, since this copy is not used in the materials-request process, this practice represents unnecessary duplication and, accordingly, is uneconomical and inefficient. In our review of Central Stores' files, we found that 175 (47.4 percent) of these duplicate PWO documents, ranging in age from 10 to 17 years, were complete. Central Stores' personnel stated that they did not remove these documents because the Scheduling Section did not inform them that the work orders were complete. Another 68 PWO documents for which materials were requested were located in the Scheduling Section's files, but not in Central Stores' files.

The lack of communication between Central Stores and the Scheduling Section is mainly responsible for the inaccuracy, obsolescence, and unnecessary duplication of these files. Furthermore, Central Stores would have no need to maintain duplicate files if it were to maintain a perpetual inventory listing of the materials ordered and purchased for specific work orders.

Inadequate Work Order System: The Physical Plant Department maintains approximately 1,800 Standing Work Orders (SWOs) that it uses for daily, repetitious work requests, primarily from the Housing Services Section. requests include routine and preventive maintenance and plumbing, electrical, According to several managers within the Physical and carpentry repairs. Plant Department, work control procedures were inadequate because work was charged to SWOs that did not coincide with their intended purpose. sulted in the inefficient use of staff hours, further contributing to the backlog cited in Finding No. 2A. In addition, the Auxiliary Services Division and the various academic and administrative departments circumvented the established procedures for requesting work (i.e., submitting a written work request form to the Work Control Section) by telephoning the Physical Plant shops or by speaking directly to the tradespeople to place their work orders. those requests already been processed through regular channels in the Work Control Section, duplicate work orders would have resulted. If undetected, such duplication could result in scheduling and performing the same jobs more than once, which is uneconomical and inefficient scheduling of staff hours and use of the maintenance appropriation allotted to the Physical Plant Department. These inadequacies result because the tradespeople are able to fill out an RMO form, write in one of the SWO numbers, perform the work, and submit the paper work to the Work Control Section.

Additionally, the Physical Plant Department categorizes work orders for

urgent, emergency projects as Field Directed Work Orders (FDWOs). It is intended that the need for FDWOs be assessed in the field as it arises and that no formal writeup of specifications nor estimate of costs be done. Our review of the 35 FDWOs started or completed during the audit period disclosed that only 5 (14.3 percent) of them were documented as emergencies. The remaining 30 (85.7 percent) were classified as FDWOs merely to prioritize them for completion because the Physical Plant Department has no established procedure for prioritizing work orders on an impartial basis. As a result, some areas of the campus, such as the University Health Services and some of the science buildings, constitute the majority of the backlog of the work orders.

- D. Lack of Procedures Manuals: The Physical Plant Department currently has no manuals to outline procedures to be followed under the work order system. The absence of procedures manuals leads to misunderstandings by both the work requestors and the tradespeople who perform the work requested, and it contributes to and aggravates the deficiencies mentioned in Findings No. 2A, 2B, and 2C. Responsible Physical Plant Department officials recognized this lack of procedures manuals as a weakness on their part and intend to generate a user manual to complement the new work order system that as of our audit completion date was in the development phase. However, the Physical Plant Department will need additional manuals, to be distributed campus—wide, to describe in detail the procedures to be followed by those who submit work requests.
- E. <u>Cost Overruns</u>: Our review of the Job Status Report (JSR) disclosed 27 work orders with cost overruns ranging from \$700 to \$78,000. These overruns resulted from PWO change orders, which may have represented legitimate excess costs and changes in scope of work orders, not being processed. The JSR is a computerized collection of costs for each of the various types of

work orders. However, this report was not used by management to monitor costs as they were incurred, nor was it used to ensure that change orders were processed, partially because the report is not generated in a timely manner by the UMA Data Processing Center (DPC). The report is scheduled to be generated weekly, but is usually low on the DPC priority list and, therefore, may occasionally be several months behind. Because the cost increases were not monitored as they were incurred and the change orders were not processed, the university had no assurance that the cost overruns were necessary and accurate.

F. Materials Missing and Subject to Further Loss: The Physical Plant Department does not maintain sufficient control over the materials purchased specifically for work orders. Our review of materials purchased during the audit period disclosed that materials having a total value of \$17,781 were missing from storage. Among the missing materials were electrical switches (\$3,060), lumber (\$2,422), sheet metal (\$1,796), and doors (\$1,651). In addition, materials ordered for specific work orders, having a total value in excess of \$62,000, such as fans (\$3,960), lighting fixtures (\$3,020), insulation (\$2,119), and steel pipes (\$1,395), were subject to further loss.

Part of this insufficient control involves Central Stores' practice of ordering materials when it receives the materials requests from the Scheduling Section without coordinating a definite starting date for the actual work. This ordering practice results in untimely expenditures of funds for materials that may remain in storage for 1 to 10 years or more prior to performance of the work order. Prudent business practices suggest that the university expend its funds in a manner that would allow for maximum utilization of resources. While the nature of some work orders necessitates a lengthy lead-in time for purchases, not all work orders merit such treatment.

In addition, the potential for further loss of these materials resulted

from the following deficiencies in the storage of the materials:

- o There were no perpetual inventory records (e.g., a stock ledger) for materials purchased for future use.
- o There was no separate, enclosed storage area and no floor plan to facilitate location of materials as currently stored.
- o The storeroom was not always closed and locked.
- o Access to the storeroom was not limited to authorized persons.
- o No storekeeper was assigned to Central Stores for the evening shift.

The Comptroller's Accounting Manual, Section 25 (3-F), states, "agencies which by their nature purchase items to be stocked for future use, must maintain a stock ledger." Section 27 (2-C) further states, "Materials, supplies and all assets must be safeguarded against waste, loss, or improper or unwarranted use." Additionally, the American Institute of Certified Public Accountants (AICPA) Codification of Statements on Auditing Standards, Section 320.30, states, in part:

The system of internal control should be under continuing supervision by management to determine that it is functioning as prescribed and is modified as appropriate for changes in conditions.

Since July 1985, the Physical Plant Department has been developing a new computerized work order system. Responsible Physical Plant Department officials stated that this system will have the potential to alleviate the problems inherent in the current system. The department plans to purchase its own data processing equipment, which would make the department independent of the UMA Data Processing Center. The new system will use an on-line database system with a local area network for electronic communication among staff members. However, the internal administrative controls, which are independent of the computerized system, also need to be strengthened to ensure that (a) the current work order system functions more economically, efficiently, and effectively until implementation of the new system and (b) there is an orderly

transition from the old system to the new system that will delete the data that is currently inaccurate or obsolete.

Recommendations: The university should--

- Eliminate the large backlog of work orders, the Physical Plant Department should increase the staffing in its shops such as the electrical and plumbing shops and/or consider hiring outside contractors.
- 2. Establish a communication system that is independent of the proposed computer system that will keep all divisions informed of the progress of the work orders.
- 3. Enforce established work order request procedures by not allowing departments to make telephone requests or to contact tradespeople directly.
- 4. Establish an unbiased system for prioritizing work orders that takes into account the initial date of the work order request.
- 5. Generate procedures manuals that describe in detail how the entire work order system is to function. These manuals should be prepared for (a) the Auxiliary Services Division and the various academic and administrative departments that initiate work requests and (b) the shops and tradespeople who perform the work requested.
- 6. Establish procedures to monitor work order costs as they are incurred to facilitate documentation of changes in work scope and cost. Such procedures should include the timely generation and use of management reports such as the Job Status Report.
- 7. Safeguard the materials ordered for the work requests by
 - a. Establishing perpetual inventory records for the materials requested for work orders.
 - b. Centralizing storage for those materials into a separate, enclosed, and locked area, and use a floor plan to facilitate location of the materials. This centralization would necessitate assigning a storekeeper to maintain the inventory records and to receive and issue materials.
 - c. Keeping the main Central Storeroom locked at all times.
 - d. Limiting access to authorized persons. If persons other than storekeepers are to be admitted to the storeroom, they should be accompanied by a storekeeper.
 - e. Assigning one or two storekeepers to work the evening shift.
 - f. Ordering materials only when the work order has been assigned a definite starting date, and allow for sufficient lead-in time.

Auditee's Response:

General Comments

Rather than comment on each of the audit's concerns individually we would like to point out that Physical Plant is developing an automated Work Management System that will completely replace the present outdated manual system. The new system will address substantially all of the problem areas pointed out in this finding and eliminate most of them. One area that should be addressed, however, is the section concerning project cost overruns. After carefully reviewing all work orders that had a 15% cost overrun, it became very clear that the customer had approved all change orders and the overruns were, in fact, legitimate expenditures. Failure to go back and correct the initial estimate was an oversight on our part and will be addressed in the immediate future. However, it is important to note that all customers were satisfied with their bills and were not surprised with the final cost.

Recommendation #1

Present budget constraints will not allow significant increases in staff or the hiring of outside contractors. Management is currently reviewing the work methods of its staff and evaluating ways to increase productivity thereby affecting a reduction in the backlog of work orders. Additionally, we will continue to request additional funding in our operating budget.

Recommendations #2 through #6

The new Work Management System will provide a method of prioritizing work orders and keep divisions informed of their status. In addition, reporting facilities will be available to management to monitor work order costs.

A procedures manual is currently under development and will provide adequate instruction for those using the Work Management System.

Recommendation #7

- a. We are in the process of establishing a perpetual inventory system as part of the automated Work Management System.
- b. In conjunction with the new Work Management System Physical Plant is undergoing a complete evaluation of its storage facilities to determine the best utilization of space for the storage of maintenance and project related material.
- c. Presently the main Central Store is locked at all times.
- d. Physical Plant is developing a storage area called "Frequently Used Materials" which will be available to tradesmen 24 hours a day. The remaining areas will be locked.

- e. Management had considered assigning storekeepers to work the evening shift but determined that it was not cost effective. However, we are evaluating an upgraded check-out system to ensure better control over inventory removed. The upgraded check-out system, in conjunction with the institution of (d) above, will provide adequate control over inventory.
- f. Management will attempt to put in place procedures to improve the timing between materials delivery and project starting dates whenever possible.

Auditor's Reply: Regarding the university's general comments, we recognize that the project cost overruns may represent legitimate expenditures that were approved by the customers requesting the work, and that the customers may have been satisfied with their bills and were not surprised with the final cost. However, we requested that the university provide us with documentation to support these contentions, and none was provided prior to the issuance of this report. Our main concern relative to cost overruns was that changes in original work scope and cost were not processed so that the Job Status Report (JSR) could be updated, and, therefore, JSR could not be used by management to monitor such changes as they occurred.

3. Inadequate Control over Property and Equipment Inventories

During the two fiscal years ended June 30, 1986, the University of Massachusetts at Amherst (UMA) purchased over \$6.5 million of property and equipment from its state-appropriated equipment account. During this period, the university did not maintain sufficient control over either the property purchased from this account during the audit period or over all of UMA's property and equipment on hand as of June 30, 1986, which was valued at approximately \$50 million. As a result, the university cannot be assured that its property and equipment was adequately safeguarded against loss, or improper use.

Section 28-1 of the Comptroller's Accounting Manual requires all spending

agencies to employ appropriate techniques to adequately control physical property:

Each spending agency should maintain adequate inventory controls and accountability systems for physical property;

Each piece of equipment should have an identification number, e.g., serial number, tag number etc., attached to it and also recorded on an accounting record.

Also, the university's Property and Inventory Control Manual states, in part:

The purposes of this system are to:

- 1. Ensure that equipment items are properly recorded in the fiscal records of the University and that pertinent information regarding each item of inventorial equipment is readily available.
- 2. Facilitate the physical control of University equipment through maintenance of a standard property numbering system.

We found the following specific deficiencies in the university's system of inventory control:

- A. Twenty-seven percent of the purchases tested during the current audit period were not reflected on the university's inventory records.
- B. Thirty-eight percent of inventory items we attempted to locate could not be found.
- A. <u>Current Equipment Purchases Not Reflected on University Records</u>: We tested 30 of the equipment items listed on the Comptroller's record of expenditures as items purchased during the audit period to determine whether those items were on hand and reflected on the university's inventory listing. Eight (27 percent) of the items we tested, totalling \$9,212, were not included on the university's equipment listing. These items, including air conditioners, typewriters, an intercom, and a personal computer, were local purchases that were either picked up at the vendor or delivered by the vendor to the requesting department, thereby bypassing the university's Central Receiving Department and its Property and Inventory Control Department. As a result,

these items were not placed on the university's inventory listing and, accordingly, were not safeguarded against loss, or improper use.

B. Equipment Items That Could Not Be Located (38%): We also tested 72 of the items listed on the university's overall property and equipment inventory listing to verify their existence, proper location, property number, condition, and proper description. We were unable to verify the existence of 27 (38 percent) of the items sampled. We found that 4 of the items had been discarded, and we were unable to view 3 other items because of lack of access to certain locked locations. After a thorough search, we were still unable to locate 20 other items having a total value of \$12,946, including refrigerators, computer components, video receivers, typewriters, and a copy machine.

We believe that vague and unclear equipment descriptions and locations made verification of sampled items more difficult. For example, an item described on university records as a hand truck was actually a hydraulic pallet jack, and an item listed as a Homelite weed-eater was actually a bush saw. In addition, the locations for some of the equipment items were general areas of the campus that include several buildings, which made locating these items very difficult. As a result, during our review of the university's inventory listing, we expended an excessive amount of audit time identifying the items selected for testing.

Another factor that contributed to our difficulty in verifying the existence of sampled items was a deficiency in the university's standard property numbering (tagging) system. Under the property numbering system, agency numerical tags are affixed to equipment upon receipt, and a form is completed to initiate entry into university inventory records. We found, however, that 3 (30 percent) of the 10 items assigned to the Grounds Section of the Physical Plant Department that we tested were missing inventory tags. We were able to

verify only one of those 3 items through the use of serial numbers.

One inherent problem with the university's property and equipment is the size of the staff available to control it. Although the Property and Inventory Control Department's seven-person staff has made a strong effort to tag equipment and keep its inventory listing updated, the staff is too small to maintain the more than 45,000 items needing control on a current and accurate basis.

Recommendations: The university should--

- 1. Develop a method to enable the Property and Inventory Control Department to identify items purchased locally so that it can ensure that the local purchases currently bypassing the Central Receiving Department are identified and recorded on the university's inventory listing.
- 2. Make a strong university-wide commitment to strengthen inventory-control procedures. A successful inventory system cannot be the sole responsibility of a few individuals. All university departments and department heads must share in the accountability of property in their custody.
- 3. Assign an individual from the Property and Inventory Control Department to review present description and location categories. This individual should address the general broadness of each category and should describe each category in more detail to reduce the amount of time needed to locate selected items.

Auditee's Response:

General Comment

The Amherst campus was in the process of converting from one inventory system to another during the audit because the old system no longer met our needs. Installation of the new inventory system has been completed and as a result, any inaccurate or incomplete information found during the auditor's review should be substantially eliminated.

Recommendation: Par 1

We are reviewing alternate methods of identifying equipment deliveries to the Amherst campus and expect to substantially eliminate this problem in the near future.

Recommendation: Par 2

The Amherst campus has a strong commitment to compiling complete and accurate inventory records. This commitment is evidenced by the installation of a new inventory system, additional personnel and



increased resources made available to the Property and Inventory ${\tt Department.}$

Recommendation: Par 3

During the past six months, descriptions have been upgraded to more accurately reflect the items being tagged. When inaccurate descriptions are communicated to the Property Office, corrections are made.

FINANCIAL STATEMENTS

Statement No. I

Comparative Statement of Expenditures under Maintenance Appropriations and Receipts Account of Income

Two Fiscal Years Ended June 30, 1986

Increase (Decrease)	\$10,091,728	\$ 4,955,514 5,758,836 \$10,714,350 (622,622) \$10,091,728	\$863,021	\$ 7,334,318 365,788 1,194,813 10,791 10,939 369,050 56,063 50,307 171,111 509,176 (231,789) 217,330 623,122 33,308
1985	\$136,252,836	\$135,497,986 - \$135,497,986 754,850 \$136,252,836	\$31,637,996	\$ 95,839,968 4,865,622 8,473,561 25,699 130,365 10,294,887 68,783 734,751 534,655 4,490,629 3,404,218 2,010,340 2,935,333 1,687,286 1,687,286
1986	\$146,344,564	\$140,453,500 5,758,836 \$146,212,336 132,228 \$146,344,564	\$32,501,017	\$103,174,286 5,231,410 9,668,374 36,490 141,304 1,912 10,663,937 785,058 705,766 4,999,805 3,172,429 2,227,670 3,558,455 1,720,594 \$146,212,336
	Appropriations (Account No. 7410-0000)	Disbursements Encumbrances Expenditures Reverted	Receipts Account of Income	Analysis of Expenditures: Salaries - Permanent Salaries - Other Salaries - Other Services - Nonemployees Clothing Housekeeping Supplies and Expenses Laboratory and Medical Supplies and Expenses Laboratory and Medical Supplies and Expenses Farm and Grounds Travel and Automotive Expenses Advertising and Printing Maintenance - Repairs, Replacements, and Alterations Special Supplies and Expenses Office and Administrative Expenses Equipment Rentals

87-213-2

Increase (Decrease)

1985

1986

Analysis of Receipts Account of Income:			
Tuition and Fees	\$31,891,598	\$30,915,277	\$976,321
Bents	2,125	2,365	(240)
2 d C C C C C C C C C C C C C C C C C C	102,215	175,036	(72,821)
Building Authority Debt Service	97,010	97,010	1
Reimbursement for Services - Boarding Halls Appropriation Act	300,000	300,000	1
Missellanonis	108,069	148,308	(40,239)
	\$32,501,017	\$31,637,996	\$863,021

The accompanying notes are an integral part of these financial statements.

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Statement No. II

Comparative Statement of Budget and Actual Expenditures under Appropriation and Receipts Account of Income

Fiscal Year Ended June 30, 1986

Actual (under)/over

Budget	\$143,647	\$6 \$112,053 0 (217,803) 4 258,433 0 4,820	5		\$831,165 (240) 5 (72,921) 0 (64,232) (40,239) 2 (663,533
Actual	\$146,344,564	\$103,174,286 5,231,410 9,668,374 36,490	141,304 1,912 10,663,937 124,846	785,058 705,766 4,999,805 3,172,429 2,227,670 3,558,455 1,720,594 \$146,212,336	\$31,891,598 2,125 102,215 97,010 300,000 108,069 \$32,501,017
Budget	\$146,200,917	\$103,062,233 5,449,213 9,409,941 31,670	132,130 2,303 10,664,000 135,878	799,041 693,279 4,822,911 3,448,434 2,203,433 3,567,233 1,779,218 \$146,200,917	\$31,060,433 2,365 175,136 97,010 364,232 148,308 \$31,847,484
	Appropriation (Account No. 7410-0000)	Expenditures: Salaries - Permanent Salaries - Other Services - Nonemployees Clothing	Housekeeping Supplies and Expenses Laboratory and Medical Supplies and Expenses and General Care Heat and Other Plant Operations Farm and Grounds	Travel and Automotive Expenses Advertising and Printing Maintenance - Repairs, Replacements, and Alterations Special Supplies and Expenses Office and Administrative Expenses Equipment Rentals Total Expenditures	Receipts Account of Income: Tuition and Fees Rents Sales Building Authority Debt Service Reimbursement for Services - Boarding Halls Appropriation Act Miscellaneous Total Receipts

87-213-2

Statement No. III

Comparative Statement of Budget and Actual Expenditures under Appropriation and Receipts Account of Income

Fiscal Year Ended June 30, 1985

Actual (under)/over	nagnng	1	\$(411,602) (12,944)	(54,585) (1,645)	(1,585)	(414)	(66)	(25,190)	(87,665)	(55,506)	(6,170) (28,505)	(47,645)	\$(754,850)		\$543,383 365	3,036	(68,990)	708	\$478,502
Δ 	Actual	\$136,252,836	\$ 95,839,968 4,865,622	8,473,561 25,699	130,365	1,889	68,783	734,751	4,490,629	3,404,218	2,010,340	1,687,286	\$135,497,986		\$30,915,277 2,365	175,036	97,010	148,308	\$31,637,996
, oo	nagong	\$136,252,836	\$ 96,251,570 4,878,566	8,528,146	131,950	2,303	68,878	759,941	242,841 4,578,294	3,459,724	2,016,510 2,963,838	1,734,931	\$136,252,836		\$30,371,894	172,000	166,000	300,000	\$31,159,494
Fiscal leaf blued Julie Jo, 1700		Appropriation (Account No. 7410-0000)	Expenditures: Salaries - Permanent Salaries - Other	1	Housekeeping Supplies and Expenses	Laboratory and Medical Supplies and Expenses and General Care	hear and crounds	Travel and Automotive Expenses	Advertising and Printing Maintenance - Repairs, Replacements, and Alterations	Special Supplies and Expenses	Office and Administrative Expenses Equipment	Rentals	Total Expenditures	Receipts Account of Income:	Tuition and Fees	Sales		Reimbursement for Services - Boarding Halls Appropriation Act Miscellaneous	Total Receipts

The accompanying notes are an integral part of these financial statements.



NOTES TO FINANCIAL STATEMENTS

1. Summary of the Commonwealth's Significant Accounting Policies

According to Chapter 7A, Sections 7, of the General Laws, as amended, the State Comptroller is responsible for the Commonwealth's accounting system. The Comptroller establishes and maintains funds as authorized or mandated by the various provisions of the General Laws. The State Treasurer, a constitutional officer, has custody of and manages the Commonwealth's cash and investments.

Certain of the Commonwealth's accounting and financial reporting policies and procedures differ from generally accepted accounting principles (GAAP) for governmental units. The significant differences between the Commonwealth's current accounting practices and GAAP are described below.

Revenue Recognition: GAAP requires that governmental and similar trust funds recognize revenue on the modified accrual basis of accounting and that revenue be recognized in the period in which it becomes measurable and available. Proprietary and similar trust funds should use the accrual basis of accounting, which recognizes revenue when it is earned and available. The State Comptroller does not maintain accounts receivable. In addition, the Comptroller's statements do not reflect revenues earned but not yet received.

Expenditure Recognition: GAAP requires that measurable expenditures, except for general long-term debt unmatured interest, be recognized in the period in which the fund liability is incurred. Encumbrances are an extension of the budgetary process and do not constitute liabilities or expenditures. On June 30, however, the State Comptroller treats all maintenance encumbrances as expenditures and liabilities. In addition, the Commonwealth does not include in its financial statements certain substantial liabilities under statutory programs, such as Welfare, Medicaid, and local aid, for which invoices have

not been received.

2. University of Massachusetts Basis of Accounting

Except for recording state-appropriated expenditures and state revenues on the modified accrual basis prescribed by the State Comptroller, the University of Massachusetts operates on a cash basis utilizing the principles of fund accounting. Cash-basis accounting allows for recording revenue upon receipt and recording expenditures at the time of payment, as compared to accrual-basis accounting, which requires recording revenues and expenditures when they are incurred. Fund accounting recognizes the various restrictions, specific regulations, and designations attached to various resources utilized by the organization. Resource limitations may be imposed by internal management, governing bodies, or external donors or grantors.

The university's records are maintained through its financial accounting system. This automated system is designed to provide information required for budgetary control, as well as fund-accounting data. This system comprises the financial records of the university.

SUPPLEMENTARY INFORMATION

1. Audit Review

At the conclusion of the audit, a draft copy of this report provided to and discussed with the following officials of the University of Massachusetts:

John L. DeNyse, Vice-Chancellor for Administration and Finance; Paul Page, Associate Vice-Chancellor for Administration and Finance; Thomas M. Mathers, Assistant Director Financial Affairs; and Martin A. Smith, Acting Director of Internal Audit.

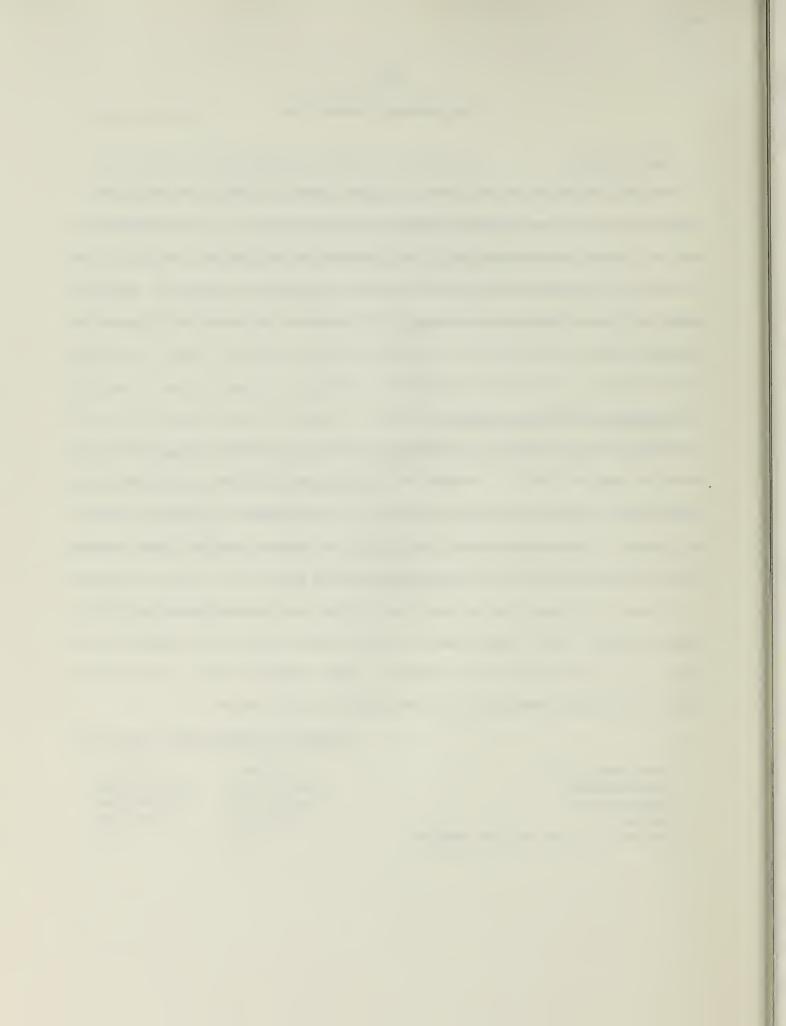
2. Average Net Cost per Student

The Commonwealth annually appropriates funds to the University of Massachusetts at Amherst (UMA) to provide educational opportunities to its citizens.

UMA receives annual appropriations from which expenditures are made to support operations. These expenditures are offset by income received from student tuition and fees and by other income generated by UMA.

Student enrollment varies from year to year and is reflected by a full-time equivalent (FTE) number based on the total credit hours taken by students. The following table summarizes UMA's appropriations, expenditures, income, and student enrollment for the last two fiscal years:

	Fiscal Year 1986	Fiscal Year 1985
Enrollment (FTE)	22,846	22,710
Appropriations	\$146,344,564	\$136,252,836
Expenditures	146,212,336	135,497,986
Income	32,501,017	31,637,996
Average Net Cost per FTE Student	4,977	4,573



ORGANIZATION

June 30, 1986

The University of Massachusetts is the state university of the Common-wealth, founded under provisions of the 1862 Morrill Land Grant Act. Incorporated as Massachusetts Agricultural College in 1863, the institution became Massachusetts State College in 1931 and the University of Massachusetts in 1947. The university is authorized by Chapter 75, Section 1, of the General Laws, as amended.

The University of Massachusetts at Amherst occupies approximately 1,200 acres of land and 150 buildings, including classroom and laboratory facilities, residence halls, and other units. The Amherst campus has an assessed valuation of approximately \$130,834,000.

The Amherst campus comprises seven four-year colleges and schools: College of Arts and Sciences, School of Education, School of Engineering, College of Food and Natural Resources, School of Health Sciences, School of Management, and School of Physical Education. The university strives to satisfy the growing needs of Massachusetts citizens by offering urban education programs in several of the state's metropolitan centers, continuing education programs on and off campus, special curricula and programs, and various support services.

The Board of Regents of Higher Education, as authorized under Chapter 15A of the General Laws, as amended, is the governing authority for a system of public institutions of higher education. The University of Massachusetts at Amherst is included in this system, as authorized by Section 3 of Chapter 15A of the General Laws, as amended. All policies necessary for the administrative management of personnel, staff services, and general business of the university are established by and are the responsibility of the Board of

Trustees of the University of Massachusetts, as authorized by Chapter 15A, Sections 9 and 10, of the General Laws, as amended. As of June 30, 1986, the Board of Regents of Higher Education, the University of Massachusetts Board of Trustees, and administrators of the university were as follows:

Board of Regents of Higher Education

Regent	Date of Original Appointment	Term Expires August 1
Janet Eisner, S.N.D.*	August 1, 1980	1986
James M. Howell, Ph.D.	November 1, 1982	1986
David S. Paresky	August 1, 1980	1986
Nicholas Boraski	November 1, 1982	1987
Gerard F. Doherty, Esq.	November 1, 1982	1987
Edward T. Sullivan	November 1, 1982	1987
David J. Beaubien	August 1, 1980	1988
Kathleen Harrington, R.S.M.	July 10, 1984	1988
Elizabeth B. Rawlins	March 9, 1984	1988
Mary Lou Anderson	July 10, 1984	1989
J. John Fox	September 14, 1981	1989
Hassan Minor, Jr., Ph.D.	July 10, 1984	1989
George H. Ellison	July 3, 1985	1990
L. Edward Lashman, Chairman	July 1, 1986	1990
Paul Marks	July 10, 1984	1990
Norma J. Markey, Student Representative	May 28, 1986	April 30, 1987

^{*}Resigned July 7, 1986.

Board of Trustees of the University of Massachusetts

	Date of Original Appointment	Term Expires March 1
James F. Carlin	March 1, 1983	1987
Nancy Caruso	March 1, 1981	1987
Robert H. Quinn	March 1, 1981	1987
Frederick S. Troy	February 7, 1986	1987
Andrew C. Knowles	March 1, 1980	1989
Thalia P. Zeryas	March 1, 1984	1989
Rosalind A. Matthews	March 1, 1985	1990
Gordon N. Oakes, Jr.	March 1, 1985	1990
Richard A. Bell, Student Representative	*	*
Daniel Burgess, Student Representative	*	*

^{*}Elected for 1985-1986 academic year.

Administrators of the University of Massachusetts

President:

David C. Knapp, Ph.D. Appointed: June 7, 1978

Annual Salary: \$95,399

Chancellor - Amherst:

Joseph D. Duffey, Ph.D. Appointed: August 17, 1982

Annual Salary: \$93,279

Treasurer:

Robert H. Brand Appointed: December 6, 1978
Annual Salary: \$70,522

Positions Bonded

All employees of the University of Massachusetts are bonded for \$500,000 per occurrence under an honesty blanket bond.

